

### Trend Study 16B-1-02

Study site name: Long Ridge South.

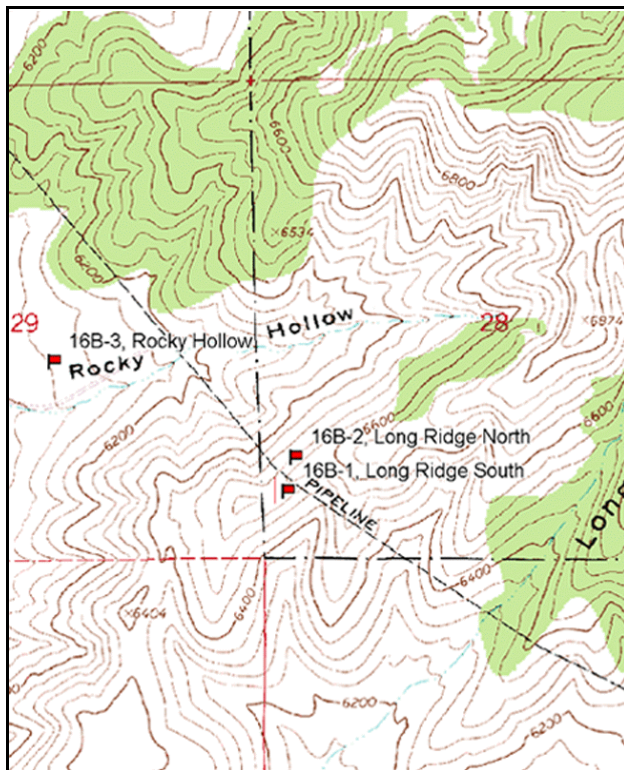
Vegetation type: Mountain Brush.

Compass bearing: frequency baseline 120 degrees magnetic (line 2-4 @ 200°M).

Frequency belt placement: line 1 (11 & 95ft), line 2 (59ft), line 3 (34ft), line 4 (71ft).

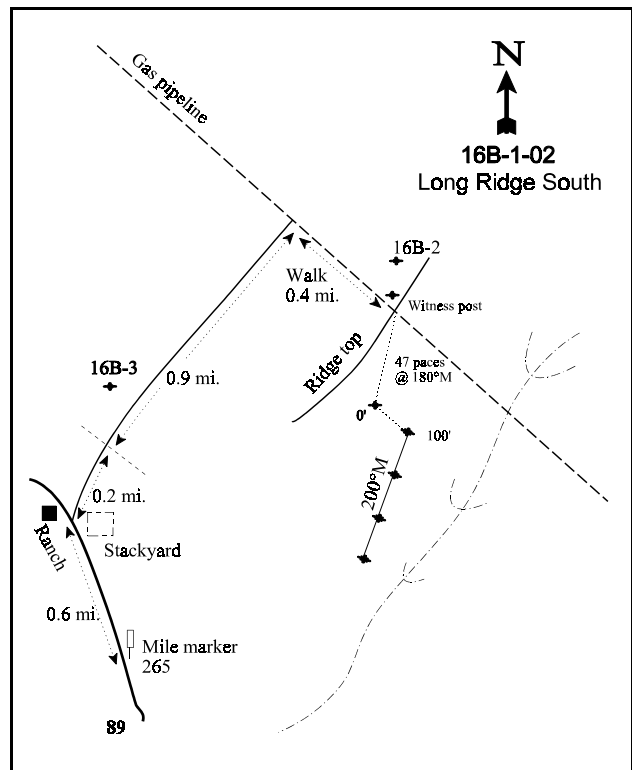
### LOCATION DESCRIPTION

Go north from Fairview on U.S. 89 for approximately 15 miles to a ranch house and stackyard (0.6 miles north of mile marker 265). Turn right, go through a DWR gate into Lassen Draw Property. Go 0.2 miles to another gate/fence. Continue up the road, past transect 16B-3, for about 0.9 miles to a pipeline intersection at the upper end of the valley. Walk 0.4 miles up the steep hill following the pipeline to the top of the first ridge. Stop here at an intersection/witness post. From the southwest corner of the intersection, walk 47 paces at a bearing of 180 degrees magnetic to the 0-foot baseline stake, marked by browse tag #9090.



Map Name: Indianola

Township 11S, Range 4E, Section 28



Diagrammatic Sketch

GPS: NAD 27, UTM 12S 4408642 N 458276 E

## DISCUSSION

### Long Ridge South - Trend Study No. 16B-1

The Long Ridge South trend study, along with its companion study #16B-2, is located on Division property north of Indianola. The mountain brush covered hillsides are important wintering areas for deer and elk. The trend study is on a steep south facing slope (35% to 40%) at an elevation of 6,480 feet. Pellet group transect data taken in 2002 estimated high deer use at 106 days use/acre (261 ddu/ha). Elk use was much lower at an estimated 17 days use/acre (41 edu/ha).

The soil is relatively shallow and very rocky on the surface and throughout the profile. Effective rooting depth was estimated at just over 10 inches, but depth measurements are restricted due to the abundance of rock in the profile. Soil texture is a sandy clay loam with a slightly acidic pH (6.2). The soil is very well drained, but does have a moderate erosion hazard and moderate runoff. Because rock and pavement armor the soil surface, erosion is minimized. An erosion condition class assessment was determined as stable in 2002. Vegetation and litter cover are abundant and further guard the soil surface from erosion.

This site supports a fair diversity of preferred browse species which include serviceberry, mountain big sagebrush, and antelope bitterbrush. The dominant overstory is made up of serviceberry. Mature shrubs average 5 feet in height, resulting in a few serviceberry plants being classified as partially unavailable. Density was estimated at 432 plants/acre in 1989. Serviceberry was heavily hedged where available that year, but vigor was good and percent decadence low at 15%. During the 1997 and 2002 readings, the much larger and more accurate sample estimated serviceberry density at 340 and 260 plants/acre respectively. Heavy use declined to 65% in 1997, but again increased to 92% in 2002. Percent decadence was high in 1997 at 47%, however only 13% of the decadent plants were classified as dying. In 2002, decadency declined to the initial estimate of 15%. The steady decline in population is not surprising as reproductive potential (# of seedlings) and recruitment (# of young) have been low in all sampling years. No seedling or young plants were sampled in 2002. Reproduction has been difficult due to the abundance of cheatgrass in the understory, as well as drought conditions for several years prior to the 2002 sample. Annual growth for serviceberry averaged only 1.5 inches in 2002.

Big sagebrush found on the site was classified as mountain big sagebrush (*Artemisia tridentata vaseyana*). However, some plants exhibit characteristics of basin big sagebrush (*A. tridentata tridentata*). If both are present, they will hybridize. Density was estimated at just under 800 plants/acre in 1989, with the average height of mature plants at nearly three feet. Some sagebrush were noted as reaching 5 feet in height. The much larger sample size used in 1997 and 2002 estimated a stable population at about 700 plants/acre in both years. Use was mostly light to moderate in 1989 and 1997, with heavy use increasing to 38% of the population in 2002. The individuals displaying the heaviest use are those with the more characteristics of mountain big sagebrush. Vigor has been mostly normal in all sampling periods. Percent decadence has ranged from 25% in 1989 to 6% in 1997. Decadence was estimated at 15% in 2002, which is good considering the drought that was present prior to and during that sampling period. Recruitment by young sagebrush was good in 1997 at 29%, but declined to only 3% in 2002. Low reproduction is a result of both drought and severe competition from cheatgrass which dominates the understory. Annual growth on sagebrush averaged only 1.4 inches in 2002.

Bitterbrush is the other preferred browse found on the site. It makes up 20% of the browse cover and had an estimated density of 140 plants/acre in 2002. The current density estimate is a decline from 220 plants/acre in 1997. Mature plants exhibit a tall life-form averaging about 4½ feet in height in 2002. Utilization has been very heavy for both 1997 and 2002. Bitterbrush displaying poor vigor increased from 27% in 1997 to 43% in 2002. Percent decadence was relatively low at 27% in 1997, but increased to 86% in 2002. Increases in decadence and poor vigor often result with drought and should improve with better precipitation. Recruitment is poor with no seedlings or young sampled in any reading.

Low rabbitbrush provides about 40% of the total shrub cover on the site. It had an estimated density of 2,460 plants/acre in 1997, slightly decreasing to 2,240 plants/acre in 2002.

The herbaceous understory is abundant, but dominated by cheatgrass which makes up over 70% of the grass cover. Even with drought in 2002, cheatgrass increased in nested frequency. The fire hazard potential for this site is high with the abundance of cheatgrass in the understory. The only common perennial grass is bluebunch wheatgrass. Bluebunch wheatgrass significantly increased in nested frequency in 2002. Most of the bluebunch wheatgrass are found either growing underneath or in close proximity to shrubs. The forb composition is diverse yet the majority of the forb cover comes from annual species like pale alyssum, little pod false flax, and storksbill. The most common perennial species include: Louisiana sage, Beckwith milkvetch, spreading fleabane, and scarlet globemallow. Sum of nested frequency for perennial forbs declined by 53% in 2002 due to drought.

#### 1989 APPARENT TREND ASSESSMENT

The soil is somewhat limiting, but current erosion is slight. Soils appear to be stable. Vegetative trend appears to be stable to slightly down. There is a low frequency of forbs and desirable browse compared to other mountain brush sites. Production of the preferred browse, serviceberry, may become less available.

#### 1997 TREND ASSESSMENT

Trend for soil is up slightly with a decrease in percent bare soil from 9% to 3%. Trend for browse is down slightly. Mountain big sagebrush appears to be stable, but serviceberry is declining in density and increasing in decadence. Bitterbrush is very heavily utilized with reduced vigor on nearly one-third of the population and no reproduction is evident. Serviceberry and bitterbrush together contribute 42% of the browse cover, and 81% of the preferred browse species cover. Trend for the herbaceous understory is up slightly due to an increase in the sum of nested frequency for perennial grasses and forbs. Cheatgrass still dominates the understory, while bluebunch wheatgrass increased significantly in its nested frequency value.

##### TREND ASSESSMENT

soil - up slightly (4)

browse - down slightly (2)

herbaceous understory - up slightly (4)

#### 2002 TREND ASSESSMENT

Soils have a stable trend. Percent bare soil slightly increased, and litter cover declined in 2002. These changes are due to drought and will improve with normal precipitation. Vegetation and litter cover are still abundant and effectively limit erosion. Trend for browse is slightly down. The preferred species, serviceberry, bitterbrush, and mountain big sagebrush all show slight declines in density. The bitterbrush and mountain big sage populations also show increases in decadency and poor vigor. Recruitment is poor for all species which is not surprising with increased competition from cheatgrass as well as drought in 2002. Trend for the herbaceous understory is slightly down. Perennial grasses, specifically bluebunch wheatgrass, slightly increased in nested frequency, but cheatgrass also increased in nested frequency and remains the dominant understory species. Perennial forbs declined considerably in 2002 with drought. Forb diversity is fairly high, yet most species occur infrequently.

##### TREND ASSESSMENT

soil - stable (3)

browse - slightly down (2)

herbaceous understory - slightly down (2)

HERBACEOUS TRENDS --  
Herd unit 16B, Study no: 1

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'89	'97	'02	'89	'97	'02	'97	'02
G	Agropyron spicatum	<sub>a</sub> 138	<sub>b</sub> 197	<sub>b</sub> 226	55	71	81	5.51	8.96
G	Bromus japonicus (a)	-	<sub>a</sub> -	<sub>b</sub> 62	-	-	25	-	.27
G	Bromus tectorum (a)	-	<sub>a</sub> 347	<sub>b</sub> 377	-	100	100	23.89	24.84
G	Carex spp.	4	-	-	1	-	-	-	-
G	Poa fendleriana	<sub>b</sub> 22	<sub>ab</sub> 6	<sub>a</sub> 1	9	4	1	.09	.00
G	Poa secunda	4	3	5	1	1	2	.03	.01
G	Sitanion hystrix	-	4	-	-	1	-	.00	-
G	Sporobolus cryptandrus	-	1	-	-	1	-	.03	-
G	Stipa comata	5	1	-	2	1	-	.03	-
Total for Annual Grasses		0	347	439	0	100	125	23.89	25.11
Total for Perennial Grasses		173	212	232	68	79	84	5.70	8.98
Total for Grasses		173	559	671	68	179	209	29.60	34.10
F	Agoseris glauca	<sub>a</sub> -	<sub>b</sub> 16	<sub>b</sub> 8	-	9	5	.12	.02
F	Alyssum alyssoides (a)	-	<sub>a</sub> 171	<sub>b</sub> 236	-	65	76	.88	1.32
F	Artemisia ludoviciana	<sub>b</sub> 74	<sub>a</sub> 34	<sub>a</sub> 44	34	14	18	.92	.36
F	Astragalus beckwithii	<sub>a</sub> -	<sub>b</sub> 24	<sub>b</sub> 9	-	11	6	.38	.08
F	Astragalus utahensis	-	5	-	-	3	-	.04	-
F	Balsamorhiza sagittata	<sub>b</sub> 15	<sub>a</sub> 4	<sub>ab</sub> 6	8	2	4	.04	.31
F	Camelina microcarpa (a)	-	52	42	-	21	20	1.78	.15
F	Calochortus nuttallii	5	1	1	3	1	1	.01	.00
F	Cirsium spp.	6	5	-	2	2	-	.06	-
F	Collomia linearis (a)	-	<sub>b</sub> 40	<sub>a</sub> 2	-	21	1	.26	.00
F	Collinsia parviflora (a)	-	8	6	-	4	2	.04	.01
F	Crepis acuminata	-	6	2	-	3	1	.02	.00
F	Cryptantha spp.	-	2	-	-	1	-	.03	-
F	Cymopterus spp.	-	2	-	-	1	-	.00	-
F	Cynoglossum officinale	-	2	-	-	1	-	.03	-
F	Descurainia pinnata (a)	-	7	2	-	2	1	.04	.00
F	Epilobium brachycarpum (a)	-	<sub>b</sub> 6	<sub>a</sub> -	-	5	-	.02	-
F	Erodium cicutarium (a)	-	<sub>b</sub> 146	<sub>a</sub> 76	-	55	31	1.39	1.03
F	Erigeron divergens	<sub>a</sub> -	<sub>b</sub> 75	<sub>a</sub> -	-	34	-	1.75	-
F	Eriogonum racemosum	10	6	4	4	2	2	.03	.01
F	Haplopappus acaulis	-	4	-	-	2	-	.30	-
F	Lappula occidentalis (a)	-	6	-	-	2	-	.01	-
F	Lactuca serriola	-	4	-	-	3	-	.02	-
F	Lithospermum ruderales	10	11	1	5	4	1	.22	.00
F	Lomatium dissectum	4	-	-	3	-	-	.00	-

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'89	'97	'02	'89	'97	'02	'97	'02
F	Microsteris gracilis (a)	-	1	6	-	1	2	.00	.01
F	Phlox longifolia	6	4	4	4	2	2	.01	.01
F	Polygonum douglasii (a)	-	3	-	-	2	-	.01	-
F	Ranunculus testiculatus (a)	-	3	-	-	1	-	.00	-
F	Sisymbrium altissimum (a)	-	1	-	-	1	-	.00	-
F	Sphaeralcea coccinea	<sub>a</sub> 14	<sub>b</sub> 42	<sub>b</sub> 38	7	17	16	.79	.25
F	Tragopogon dubius	-	2	-	-	1	-	.00	-
F	Viguiera multiflora	-	1	-	-	1	-	.01	-
Total for Annual Forbs		0	444	370	0	180	133	4.46	2.53
Total for Perennial Forbs		144	250	117	70	114	56	4.84	1.07
Total for Forbs		144	694	487	70	294	189	9.30	3.61

Values with different subscript letters are significantly different at alpha = 0.10

#### BROWSE TRENDS --

Herd unit 16B, Study no: 1

T y p e	Species	Strip Frequency		Average Cover %	
		'97	'02	'97	'02
B	Amelanchier alnifolia	16	12	4.17	2.87
B	Artemisia tridentata vaseyana	27	23	1.82	2.09
B	Chrysothamnus nauseosus albicaulis	1	2	-	.00
B	Chrysothamnus viscidiflorus viscidiflorus	46	53	7.42	5.16
B	Gutierrezia sarothrae	12	2	.51	-
B	Opuntia spp.	16	16	1.27	.86
B	Purshia tridentata	11	7	3.71	2.17
B	Tetradymia canescens	4	4	.03	.31
Total for Browse		133	119	18.95	13.49

#### CANOPY COVER --

Herd unit 16B, Study no: 1

Species	Percent Cover	
	'97	'02
Amelanchier utahensis	-	2

Key Browse Annual Leader Growth  
Herd unit 16B , Study no: 1

Species	Average leader growth (in) '02
Amelanchier alnifolia	1.5
Artemisia tridentata vaseyana	1.4

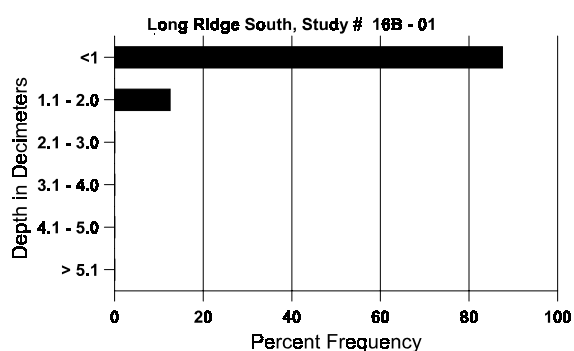
BASIC COVER --  
Herd unit 16B, Study no: 1

Cover Type	Nested Frequency		Average Cover %		
	'97	'02	'89	'97	'02
Vegetation	380	392	6.75	49.93	54.82
Rock	233	219	18.00	15.18	13.60
Pavement	147	165	14.50	2.49	3.69
Litter	385	384	52.00	52.19	40.37
Cryptogams	64	2	.25	.40	.03
Bare Ground	117	122	8.50	2.52	4.48

SOIL ANALYSIS DATA --  
Herd Unit 16B, Study no: 01, Long Ridge South

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
10.2	55.6 (13.1)	6.2	60.7	18.7	20.6	2.7	21.3	217.6	.5

## Stoniness Index



PELLET GROUP FREQUENCY --  
Herd unit 16B, Study no: 1

Type	Quadrat Frequency		Pellet Transect	
	'97	'02	Pellet Groups per Acre '02	Days Use per Acre (ha) '02
Rabbit	-	3	-	-
Elk	19	1	218	17 (41)
Deer	46	30	1375	106 (261)

## BROWSE CHARACTERISTICS --

Herd unit 16B, Study no: 1

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier alnifolia																		
S	89	-	-	-	-	-	-	2	-	-	2	-	-	-	66		2	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	89	-	-	5	-	-	5	-	1	-	11	-	-	-	366	89 45	11	
	97	-	-	-	1	-	6	1	-	-	8	-	-	-	160	52 46	8	
	02	-	-	1	-	1	9	-	-	-	11	-	-	-	220	61 53	11	
D	89	-	-	2	-	-	-	-	-	-	1	-	1	-	66		2	
	97	-	-	1	-	3	4	-	-	-	7	-	-	1	160		8	
	02	-	-	1	-	-	1	-	-	-	1	-	-	1	40		2	
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	80		4	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			92%			08%			-21%							
'97		18%			65%			06%			-24%							
'02		08%			92%			08%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	432	Dec:	15%			
												'97	340		47%			
												'02	260		15%			
Artemisia tridentata vaseyana																		
S	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	02	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
Y	89	7	7	-	-	-	-	-	-	-	14	-	-	-	466		14	
	97	10	-	-	-	-	-	-	-	-	10	-	-	-	200		10	
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	89	-	2	2	-	-	-	-	-	-	4	-	-	-	133	34 52	4	
	97	10	6	1	1	4	1	-	-	-	23	-	-	-	460	24 31	23	
	02	10	7	10	-	-	1	-	-	-	28	-	-	-	560	23 38	28	
D	89	2	2	2	-	-	-	-	-	-	5	-	-	1	200		6	
	97	-	-	2	-	-	-	-	-	-	1	-	-	1	40		2	
	02	2	1	1	-	-	1	-	-	-	2	-	-	3	100		5	
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	60		3	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	80		4	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		46%			17%			04%			-12%							
'97		29%			11%			03%			- 3%							
'02		24%			38%			09%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	799	Dec:	25%			
												'97	700		6%			
												'02	680		15%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysanthamnus nauseosus albicaulis																		
M	89	1	-	-	-	-	-	-	-	-	1	-	-	-	33	22	19	1
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20	26	32	1
	02	-	1	-	-	-	-	-	-	-	1	-	-	-	20	24	24	1
D	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	1	-	-	-	-	-	-	-	1	-	-	-	20			1
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			00%			-39%							
'97		00%			00%			00%			+50%							
'02		100%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	33	Dec:	0%			
												'97	20		0%			
												'02	40		50%			
Chrysanthamnus viscidiflorus viscidiflorus																		
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	13	-	-	-	-	-	-	-	-	13	-	-	-	260			13
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	89	31	-	-	-	-	-	-	-	-	6	-	25	-	1033	12	20	31
	97	108	-	1	-	1	-	-	-	-	110	-	-	-	2200	13	24	110
	02	95	-	-	-	-	-	-	-	-	95	-	-	-	1900	11	21	95
D	89	4	-	-	-	-	-	1	-	-	1	-	3	1	166			5
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	17	-	-	-	-	-	-	-	-	14	-	-	3	340			17
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		00%			00%			81%			+51%							
'97		.81%			.81%			00%			- 9%							
'02		00%			00%			03%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	1199	Dec:	14%			
												'97	2460		0%			
												'02	2240		15%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.			Total
		1	2	3	4	5	6	7	8	9	1	2	3	4					
Gutierrezia sarothrae																			
M	89	56	-	-	-	-	-	-	-	-	56	-	-	-	1866	11	8	56	
	97	23	-	-	1	-	-	-	-	-	24	-	-	-	480	10	11	24	
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20	4	7	1	
D	89	6	-	-	-	-	-	-	-	-	5	-	-	1	200			6	
	97	-	-	-	-	-	-	-	-	-	-	-	-	0			0		
	02	1	-	-	-	-	-	-	-	-	-	-	-	20			1		
X	89	-	-	-	-	-	-	-	-	-	-	-	-	0			0		
	97	-	-	-	-	-	-	-	-	-	-	-	-	20			1		
	02	-	-	-	-	-	-	-	-	-	-	-	-	160			8		
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'89		00%			00%			02%			-77%								
'97		00%			00%			00%			-92%								
'02		00%			00%			50%											
Total Plants/Acre (excluding Dead & Seedlings)												'89	2066	Dec:	10%				
												'97	480		0%				
												'02	40		50%				
Opuntia spp.																			
Y	89	1	-	-	-	-	-	-	-	-	1	-	-	-	33			1	
	97	-	-	-	-	-	-	-	-	-	-	-	-	0			0		
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1	
M	89	22	-	-	-	-	-	-	-	-	22	-	-	-	733	6	14	22	
	97	19	-	-	2	-	-	-	-	-	21	-	-	-	420	7	18	21	
	02	25	-	-	-	-	-	-	-	-	25	-	-	-	500	6	20	25	
D	89	1	-	-	-	-	-	-	-	-	-	-	1	-	33			1	
	97	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'89		00%			00%			04%			-45%								
'97		00%			00%			00%			+15%								
'02		00%			00%			00%											
Total Plants/Acre (excluding Dead & Seedlings)												'89	799	Dec:	4%				
												'97	440		5%				
												'02	520		0%				
Pediocactus simpsonii																			
M	89	1	-	-	-	-	-	-	-	-	1	-	-	-	33	4	6	1	
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	13	0	
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	15	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'89		00%			00%			00%											
'97		00%			00%			00%											
'02		00%			00%			00%											
Total Plants/Acre (excluding Dead & Seedlings)												'89	33	Dec:	-				
												'97	0		-				
												'02	0		-				

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Purshia tridentata																		
M	89	-	3	2	-	-	-	-	-	-	5	-	-	-	166	26	43	5
	97	-	-	3	-	1	4	-	-	-	8	-	-	-	160	42	63	8
	02	-	-	-	-	-	1	-	-	-	1	-	-	-	20	52	65	1
D	89	-	-	1	-	1	-	-	-	-	2	-	-	-	66			2
	97	-	-	1	-	-	2	-	-	-	-	-	-	3	60			3
	02	-	-	2	-	-	4	-	-	-	3	-	-	3	120			6
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		57%			43%			00%			- 5%							
'97		09%			91%			27%			-36%							
'02		00%			100%			43%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	232	Dec:	28%			
												'97	220		27%			
												'02	140		86%			
Tetradymia canescens																		
S	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
Y	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	1	-	-	-	-	-	-	-	1	-	-	-	20			1
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	2	1	-	-	-	-	-	-	-	3	-	-	-	60	12	24	3
	02	4	-	-	-	-	-	-	-	-	4	-	-	-	80	10	23	4
D	89	-	5	-	-	-	-	-	-	-	-	-	-	5	166			5
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	2	-	-	-	-	-	-	-	-	-	-	-	2	40			2
X	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	02	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'89		100%			00%			100%			-52%							
'97		50%			00%			00%			+33%							
'02		00%			00%			33%										
Total Plants/Acre (excluding Dead & Seedlings)												'89	166	Dec:	100%			
												'97	80		0%			
												'02	120		33%			